

CLAIMS

1. A sandwich material comprising two metal plates which are affixed to and separated by a fibrous core, characterised in that the core comprises a three-dimensional porous network comprising metal fibres, wherein substantially all of the fibres are inclined at an acute angle ( $\theta$ ) to the plates.
- 5 2. A sandwich material according to claim 1, wherein the metal fibres are bonded together at crossover points within the network.
- 10 3. A sandwich material according to claim 1 or claim 2, wherein the metal plates and the metal fibres comprise metals independently selected from stainless steel, steel, aluminium and titanium.
- 15 4. A sandwich material according to claim 3, wherein the metal plates and the metal fibres comprise stainless steel or aluminium.
- 20 5. A sandwich material according to any preceding claim, wherein the plates are affixed to the fibrous core by means of a braze.
6. A sandwich material according to any of claims 1 to 4, wherein the plates are affixed to the fibrous core by means of an adhesive.
- 25 7. A sandwich material according to any preceding claim, wherein the fibres in the core are randomly orientated.
8. A sandwich material according to any preceding claim, wherein  $\theta$  is less than  $60^\circ$ .
- 30 9. A sandwich material according to any preceding claim, wherein the average diameter of the fibres is less than 500  $\mu\text{m}$ .
10. A sandwich material according to any preceding claim, wherein the total thickness of the material is 0.5mm - 1 cm.
- 35 11. A sandwich material according to any preceding claim, wherein the fibres occupy 5-50 volume% of the core.

12. A sandwich material according to claim 11, wherein the fibres occupy 5-10 volume % of the core.
13. A sandwich material according to any preceding claim, wherein the core additionally comprises non-metallic fibres.
- 5 14. A sandwich material according to any preceding claim, wherein the fibrous core additionally comprises a polymer matrix.
- 10 15. A process for the preparation of a sandwich material as defined in any of claims 1 to 14, comprising the step of affixing two metal plates to either side of a fibrous core.
16. A welded material comprising a sandwich material as defined in any of claims 1 to 14 welded to a substrate.
- 15 17. A vehicle part comprising a sandwich material as defined in any of claims 1 to 14.
18. A vehicle part according to claim 17, which is selected from spoilers, panels and roofs.
19. A vehicle comprising a vehicle part as defined in claim 17 or claim 18.